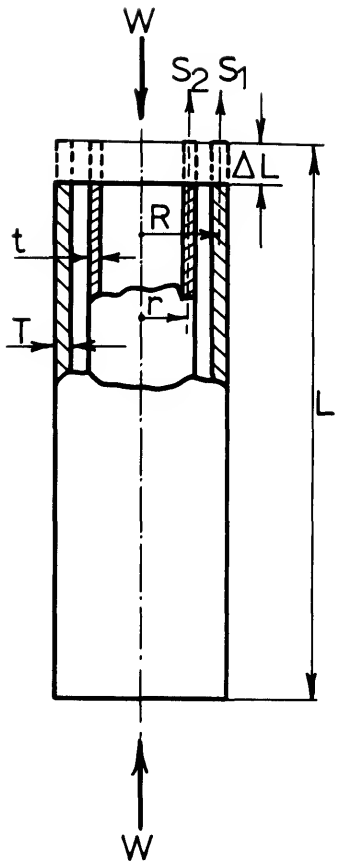

Fig. 19.7 Composite bar in compression.

Solving the foregoing relations for S_1 and S_2 yields

$$S_1 = \frac{WE_1}{2\pi(E_1RT + E_2rt)} \tag{19.12}$$

and

$$S_2 = \frac{WE_2}{2\pi(E_1RT + E_2rt)} \tag{19.13}$$

or in more general terms, putting $A_1 = 2\pi RT$ and $A_2 = 2\pi rt$, we get

$$S_1 = \frac{WE_1}{A_1E_1 + A_2E_2} \tag{19.14}$$

and

$$S_2 = \frac{WE_2}{A_1E_1 + A_2E_2} \tag{19.15}$$